

REMARKS

Claims 1-21 are pending with claims 8-21 added by this paper.

Claim Rejections Under 35 U.S.C. § 103

Claims 1, 2 and 4-7 stand rejected as allegedly being unpatentable over U.S. Patent No. 6,280,900 B1 (Chiba) in view of U.S. Patent No. 6,281,318 B1 (Yamamoto) and U.S. Patent No. 5,412,050 (Watanabe). Applicants respectfully traverse these rejections.

Chiba exemplifies reacting monomers of p-hydroxystyrene and t-butylacrylate in the presence of 2,2'-azobisisobutyronitrile, e.g., Example 2 at column 19. Chiba discloses that this exemplary copolymer (1-2) has a Mw of 22,000 and a Mw/Mn of 2.4. See, e.g., Example 2. Chiba discloses that, generally, that the copolymers (a-1) and (a-2) have a Mw of 1500 – 500,000, and still more preferably 3,000 – 300,000, and a Mw/Mn of 1–10 and still preferably 1–5, in order to secure sensitivity, heat resistance, developability, and resolution. See column 6, lines 46–57.

Watanabe discloses manufacturing polymers by anionic polymerization of monomers represented by a general formula (II). See, e.g., column 3.

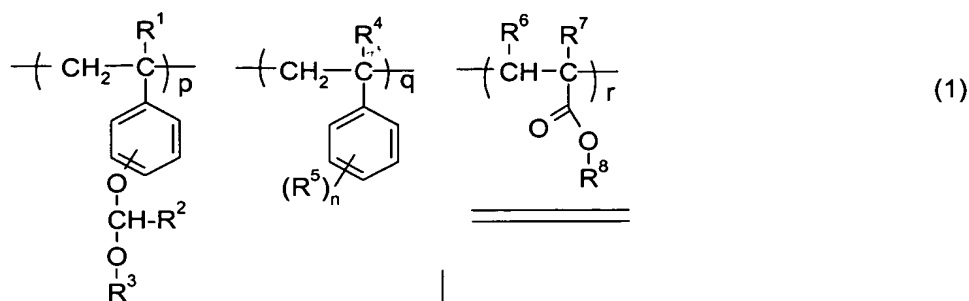
Yamamoto exemplifies polymerizing 1-(1-ethoxyethoxy)-4-(1-methylethenyl)benzene, and subsequently dissolving the resulting polymer in methanol and adding a hydrochloric acid solution. The resulting polymer obtained was a poly{4-(1-methylethenyl)phenol}. See columns 18–20.

However, the alleged combination of references fails to provide sufficient blazemarks or guideposts to obtain a polymer of formula (2) having a molecular weight dispersity (Mw/Mn) of 1–1.3. Although Chiba discloses a preferred Mw/Mn of 1–5, it fails to exemplify or fairly suggest such a compound. Consequently, applicants respectfully submit

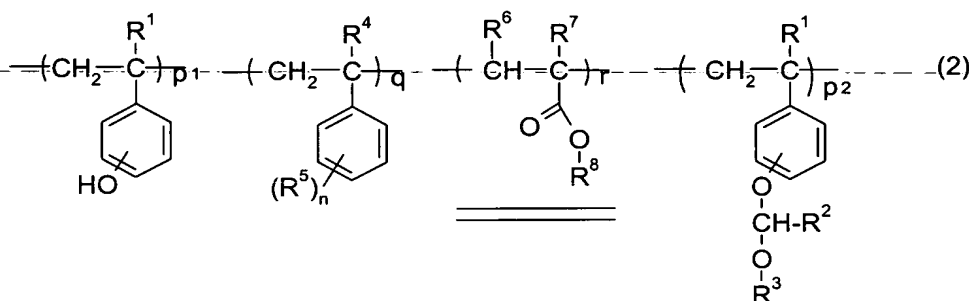
that there is insufficient motivation to render the claimed compound unpatentable. Moreover, although Yamamoto exemplifies a compound with a molecular weight dispersion ratio of 1.02 (see Example 1), this compound is not of the formula (II) and there is no teaching or suggestion to modify Yamamoto to obtain such a compound. Consequently, applicants respectfully submit that there is ample evidence to withdraw these rejections on at least this basis.

Moreover, Chiba does not suggest the process of the present invention. Chiba reacts monomers to obtain a copolymer. In marked contrast, the present invention reacts a polymer or high molecular weight compound by deblocking to obtain a compound of general formula (2). What is more, although Yamamoto exemplifies eliminating an ethoxyethoxy group from a poly{1-(1-ethoxyethoxy)-4-(1-methylethenyl)benzene}, it fails to teach or suggest that such a reaction is suitable for a polymer comprising p-hydroxystyrene and t-butylacrylate monomers (relevant to Chiba). Particularly, there is no teaching or suggestion to make such a modification to the polymer as exemplified by Chiba.

As an example, Yamamoto fails to teach or suggest deblocking a part or all of the $-\text{CH}(\text{R}^2)\text{OR}^3$ groups while avoiding deblocking $-\text{R}^8$ groups. Since the Yamamoto polymers do not contain corresponding $-\text{R}^8$ groups, there can be no expectation that they would avoid deblocking. See, e.g., the exemplary reaction below according to the invention whereby the R^8 groups are retained. One of ordinary skill in the art would not have reasonably expected that, if Yamamoto's process were conducted on a polymer containing such $-\text{R}^8$ groups, they would be retained and not deblocked. But applicants have surprisingly discovered that this does not occur.



acid catalyst
↓



The citation of the other references fails to cure this deficiency.

Consequently, applicants respectfully submit that the present invention is patentable over the cited references.

With respect to the teaching of U.S. Patent No. 6,143,460 (Kobayashi) because it does not cure the basic deficiencies of the primary reference, its combination with the other prior art will not supply the missing teachings to render the claims obvious. So as not to burden the record further, applicants will not discuss Kobayashi in detail except to state that applicants do not necessarily acquiesce to any of the statements in the Office Action referring to Kobayashi and reserve the right to comment later regarding the same, if every necessary.

In view of the above, favorable reconsideration is courteously requested. If there are any remaining issues which can be expedited by a telephone conference, the examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,


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